CLAIMS

[0094]   What is claimed is:

1   1.   A method for protecting content within a page displayed by a computer,

2   comprising:

3   identifying a designated portion of original content contained within a page, to be

4   protected;

5   encrypting the designated portion of original content to form a portion of encrypted

6   content;

7   replacing the designated portion of original content within the page with the portion

8   of encrypted content;

9   rendering the page into a graphics device, comprising decrypting the portion of

10   encrypted content; and

11   displaying at least a portion of data from the graphics device.

1   2.   The method of claim 1 wherein the page is a web page.

1   3.   The method of claim 2 wherein the web page is an HTML page.

1   4.   The method of claim 2 wherein the web page is an XML page.

1   5.   The method of claim 1 wherein the page is part of a document produced by a

2   software application.

1   6.   The method of claim 1 wherein the graphics device is a memory device.

1   7.   The method of claim 1 wherein the graphics device is a screen device.

1   8.   The method of claim 1 wherein the graphics device is a graphics port.

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1   9.   The method of claim 1 wherein the content is text content and said encrypting is

2   based on encoding of characters.

1   10. The method of claim 1 wherein the content is text content and said encrypting is

2   based on encoding of words.

1   11. The method of claim 1 wherein the content is text content and said encrypting

2   comprises adding leading and trailing characters to flag encrypted text.

1   12. The method of claim 1 wherein the content is text content and said encrypting

2   comprises padding encrypted text so that identical words have distinct encrypted

3   representations.

1   13. The method of claim 1 wherein said rendering comprises converting content into

2   graphics output.

1   14. The method of claim 13 wherein the graphics output is raster output.

1   15. The method of claim 1 wherein said identifying, said encrypting and said

2   replacing are performed by a server computer, and wherein said rendering and said

3   displaying are performed by a client computer connected to the server computer over a

4   network.

1   16. The method of claim 1 wherein said decrypting the portion of encrypted content

2   occurs within a patched operating system function for outputting content.

1   17. The method of claim 16 wherein the content is text content and the operating

2   system function is a Microsoft Windows TextOut function.

1   18. The method of claim 16 wherein the content is text content and the operating

2   system function is a Macintosh DrawText function.

1   19. The method of claim 1 further comprising formatting the page to determine a

2 page layout.

1   20. The method of claim 19 wherein the portion of encrypted content has

2 substantially the same layout within the page as the designated portion of original content.

1   21. The method of claim 19 wherein said formatting comprises decrypting

2 encrypted content, to ensure that the page layout corresponds to a layout for a page

3 containing the designated portion of original content.

1   22. The method of claim 19 wherein the content is text content and said formatting

2 comprises calculating widths of character strings.

1   23. The method of claim 22 wherein said formatting comprises decrypting

2 encrypted text strings, to ensure that the page layout corresponds to a layout for a page

3 containing the designated portion of original content.

1   24. The method of claim 23 wherein said decrypting encrypted text strings occurs

2 within a patched operating system function for determining widths of character strings.

1   25. The method of claim 24 wherein the operating system function is a Microsoft

2 Windows GetTextExtent function.

1   26. A system for protecting content within a page displayed by a computer,

2 comprising:

3   a parser identifying a designated portion of original content contained within a page,

4   to be protected;

5   an encoder encrypting the designated portion of original content to form a portion of

6   encrypted content;

7   an editor replacing the designated portion of original content with the portion of

8   encrypted content, within the page;

9   a graphics device;

10   a page renderer rendering the page into said graphics device, comprising a content

11   decoder decrypting the portion of encrypted content; and

12   a display device displaying at least a portion of data from said graphics device.

1   27.   The system of claim 26 wherein the page is a web page.

1   28.   The system of claim 27 wherein the web page is an HTML page.

1   29.   The system of claim 27 wherein the web page is an XML page.

1   30.   The system of claim 26 wherein the page is part of a document produced by a

2   software application.

1   31.   The system of claim 26 wherein said graphics device is a memory device.

1   32.   The system of claim 26 wherein said graphics device is a screen device.

1   33.   The system of claim 26 wherein said graphics device is a graphics port.

1   34.   The system of claim 26 wherein the content is text content and said encoder

2   performs encoding of characters.

1   35.   The system of claim 26 wherein the content is text content and said encoder

2   performs encoding of words.

1   36.   The system of claim 26 wherein the content is text content and said encoder adds

2   leading and trailing characters to flag encrypted text.

1   37.   The system of claim 26 wherein the content is text content and said encoder pads

2   encrypted text so that identical words have distinct encrypted representations.

1   38. The system of claim 26 wherein said page renderer comprises an output

2   processor converting content into graphics output.

1   39. The system of claim 38 wherein the graphics output is raster output.

1   40. The system of claim 26 wherein said parser, said encoder and said editor reside

2   on a server computer, wherein said graphics device and said page renderer reside on a client

3   computer, and wherein said display device is connected to the client computer, the system

4   further comprising network connectors connecting the client computer to the server

5   computer.

1   41. The system of claim 26 wherein said content decoder operates within a patched

2   operating system function for outputting content.

1   42. The system of claim 41 wherein the content is text content and the operating

2   system function is a Microsoft Windows TextOut function.

1   43. The system of claim 41 wherein the content is text content and the operating

2   system function is a Macintosh DrawText function.

1   44. The system of claim 26 further comprising a page formatter formatting the page

2   to determine a page layout.

1   45. The system of claim 44 wherein the portion of encrypted content has

2   substantially the same layout within the page as the designated portion of original content.

1   46. The system of claim 44 wherein said page formatter comprises a decoder, to

2   ensure that the page layout corresponds to a layout for a page containing the designated

3   portion of original content.

1   47. The system of claim 44 wherein the content is text content and said page

2   formatter comprises a string analyzer calculating widths of character strings.

1   48. The system of claim 47 wherein said page formatter comprises a string decoder

2   decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for

3   a page containing the designated portion of original content.

1   49. The system of claim 48 wherein said string decoder operates within a patched

2   operating system function for determining widths of character strings.

1   50. The system of claim 49 wherein the operating system function is a Microsoft

2   Windows GetTextExtent function.

1   51. A method for protecting content contained within a page displayed by a

2   computer, comprising:

3   accessing a page containing a portion of encrypted content;

4   rendering the page into a graphics device, comprising decrypting the portion of

5   encrypted content; and

6   displaying at least a portion of data from the graphics device.

1   52. The method of claim 51 wherein the page is a web page.

1   53. The method of claim 52 wherein the web page is an HTML page.

1   54. The method of claim 52 wherein the web page is an XML page.

1   55. The method of claim 51 wherein the page is part of a document produced by a

2   software application.

1   56. The method of claim 51 wherein the graphics device is a memory device.

1   57. The method of claim 51 wherein the graphics device is a screen device.

1   58. The method of claim 51 wherein the graphics device is a graphics port.

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1   59. The method of claim 51 wherein said rendering comprises converting content
2   into graphics output.

1   60. The method of claim 59 wherein the graphics output is raster output.

1   61. The method of claim 51 wherein said decrypting the portion of encrypted
2   content occurs within a patched operating system function for outputting content.

1   62. The method of claim 61 wherein the content is text content and the operating
2   system function is a Microsoft Windows TextOut function.

1   63. The method of claim 61 wherein the content is text content and the operating
2   system function is a Macintosh DrawText function.

1   64. The method of claim 51 further comprising formatting the page to determine a
2   page layout.

1   65. The method of claim 64 wherein the portion of encrypted content has
2   substantially the same layout within the page as the portion of decrypted content.

1   66. The method of claim 64 wherein said formatting comprises decrypting
2   encrypted content, to ensure that the page layout corresponds to a layout for a page
3   containing the designated portion of original content.

1   67. The method of claim 64 wherein the content is text content and said formatting
2   comprises calculating widths of character strings.

1   68. The method of claim 67 wherein said formatting comprises decrypting
2   encrypted text strings, to ensure that the page layout corresponds to a layout for a page
3   containing the portion of decrypted content.

1   69. The method of claim 68 wherein said decrypting encrypted text strings occurs

2   within a patched operating system function for determining widths of character strings.

1   70. The method of claim 67 wherein the operating system function is a Microsoft

2   Windows GetTextExtent function.

1   71. The method of claim 51 further comprising receiving the page having a portion

2   of encrypted content from a server computer.

1   72. A system for protecting content contained within a page displayed by a

2   computer, comprising:

3   computer hardware storing a page containing a portion of encrypted content;

4   a graphics device;

5   a page renderer rendering the page into said graphics device, comprising a content

6   decoder decrypting the portion of encrypted content; and

7   a display device displaying at least a portion of data from said graphics device.

1   73. The system of claim 72 wherein the page is a web page.

1   74. The system of claim 73 wherein the web page is an HTML page.

1   75. The system of claim 73 wherein the web page is an XML page.

1   76. The system of claim 72 wherein the page is part of a document produced by a

2   software application.

1   77. The system of claim 72 wherein said graphics device is a memory device.

1   78. The system of claim 72 wherein said graphics device is a screen device.

1   79. The system of claim 72 wherein said graphics device is a graphics port.

1   80. The system of claim 72 wherein said page renderer comprises an output

2 processor converting content into graphics output.

1   81. The system of claim 80 wherein the graphics output is raster output.

1   82. The system of claim 72 wherein said content decoder operates within a patched

2 operating system function for outputting content.

1   83. The system of claim 82 wherein the content is text content and the operating

2 system function is a Microsoft Windows TextOut function.

1   84. The system of claim 82 wherein the content is text content and the operating

2 system function is a Macintosh DrawText function.

1   85. The system of claim 72 further comprising a page formatter formatting the page

2 to determine a page layout.

1   86. The system of claim 85 wherein the portion of encrypted content has

2 substantially the same layout within the page as the portion of decrypted content.

1   87. The system of claim 85 wherein said page formatter comprises a decoder, to

2 ensure that the page layout corresponds to a layout for a page containing the designated

3 portion of original content.

1   88. The system of claim 85 wherein the content is text content and said page

2 formatter comprises a string analyzer calculating widths of character strings.

1   89. The system of claim 88 wherein said page formatter comprises a string decoder

2 decrypting encrypted text strings, to ensure that the page layout corresponds to a layout for

3 a page containing the portion of decrypted content.

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1   90.   The system of claim 89 wherein said string decoder operates within a patched

2   operating system function for determining widths of character strings.

1   91.   The system of claim 90 wherein the operating system function is a Microsoft

2   Windows GetTextExtent function.

1   92.   The system of claim 72 further comprising:

2   a network connector; and

3   a receiver receiving the page having a portion of encrypted content from a server

4   computer via said network connector.

1   93.   A method for protecting content contained within a page displayed by a

2   computer, comprising:

3   identifying a designated portion of original content within a page, to be protected;

4   encrypting the designated portion of original content to form a portion of encrypted

5   content; and

6   replacing the designated portion of original content within the page with the portion

7   of encrypted content.

1   94.   The method of claim 93 wherein the page is a web page.

1   95.   The method of claim 94 wherein the web page is an HTML page.

1   96.   The method of claim 94 wherein the web page is an XML page.

1   97.   The method of claim 93 wherein the page is part of a document produced by a

2   software application.

1   98.   The method of claim 93 wherein the content is text content and said encrypting

2   is based on encoding of characters.

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1   99. The method of claim 93 wherein the content is text content and said encrypting

2   is based on encoding of words.

1   100. The method of claim 93 wherein the content is text content and said encrypting

2   comprises adding leading and trailing characters to flag encrypted text.

1   101. The method of claim 93 wherein the content is text content and said encrypting

2   comprises padding encrypted text so that identical words have distinct encrypted

3   representations.

1   102. The method of claim 93 wherein the portion of encrypted content has

2   substantially the same layout within the page as the designated portion of original content.

1   103. The method of claim 93 further comprising transmitting the page with the

2   portion of encrypted content to a client computer.

1   104. A system for protecting content contained within a page displayed by a

2   computer, comprising:

3   a parser identifying a designated portion of original content within a page, to be

4   protected;

5   an encoder encrypting the designated portion of original content to form a portion of

6   encrypted content; and

7   an editor replacing the designated portion of content with the portion of encrypted

8   content, within the page.

1   105. The system of claim 104 wherein the page is a web page.

1   106. The system of claim 105 wherein the web page is an HTML page.

1   107. The system of claim 105 wherein the web page is an XML page.

1   108. The system of claim 104 wherein the page is part of a document produced by a

2 software application.

1   109. The system of claim 104 wherein the content is text content and said encoder

2 performs encoding of characters.

1   110. The system of claim 104 wherein the content is text content and said encoder

2 performs encoding of words.

1   111. The system of claim 104 wherein the content is text content and said encoder

2 adds leading and trailing characters to flag encrypted text.

1   112. The system of claim 104 wherein the content is text content and said encoder

2 pads encrypted text so that identical words have distinct encrypted representations.

1   113. The system of claim 104 wherein the portion of encrypted content has

2 substantially the same layout within the page as the designated portion of original content.

1   114. The system of claim 104 further comprising:

2   a network connector; and

3   a transmitter transmitting the page with the portion of encrypted content to a client

4   computer via said network connector.

1   115. A method for protecting text within a page displayed by a computer,

2 comprising:

3   formatting a page containing a first portion of text to determine a page layout; and

4   rendering the page according to the page layout into a graphics device, comprising:

5   replacing the first portion of text with a second portion of text;

6   converting the second portion of text to a graphics output; and

7   writing the graphics output into the graphics device.

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1   116. The method of claim 115 wherein the first portion of text has the same word

2   widths as does the second portion of text.

1   117. The method of claim 115 wherein the graphics output is raster output.

1   118. The method of claim 115 wherein said replacing the first portion of text with a

2   second portion of text occurs within a patched operating system function for converting text

3   into graphics output.

1   119. The method of claim 118 wherein the operating system function is a Microsoft

2   Windows TextOut function.

1   120. The method of claim 118 wherein the operating system function is a Macintosh

2   DrawText function.

1   121. The method of claim 115 wherein said formatting comprises:

2   replacing first text strings with second text strings; and

3   calculating widths of the second text strings based on selected font types and font

4   sizes.

1   122. The method of claim 121 wherein said replacing first text strings with second

2   text strings occurs within a patched operating system function for determining widths of

3   character strings.

1   123. The method of claim 122 wherein the operating system function is a Microsoft

2   Windows GetTextExtent function.

1   124. A system for protecting text within a page displayed by a computer, comprising:

2   a page formatter formatting a page containing a first portion of text to determine a

3   page layout; and

4   a page renderer rendering the page according to the page layout into a graphics

5   device, comprising:

6   a text processor replacing the first portion of text with a second portion of

7   text; and

8   a text convertor converting the second portion of text to a graphics output

9   and writing the graphics output into the graphics device.

1   125. The system of claim 124 wherein the first portion of text has the same word

2 widths as does the second portion of text.

1   126. The method of claim 124 wherein the graphics output is raster output.

1   127. The system of claim 124 wherein said text processor operates within a patched

2 operating system function for converting text into graphics output.

1   128. The system of claim 127 wherein the operating system function is a Microsoft

2 Windows TextOut function.

1   129. The system of claim 127 wherein the operating system function is a Macintosh

2 DrawText function.

1   130. The system of claim 124 wherein said formatter comprises:

2 a string processor replacing first text strings with second text strings; and

3 a string analyzer calculating widths of the second text strings based on selected font

4   types and font sizes.

1   131. The system of claim 130 wherein said string processor operates within a patched

2 operating system function for determining widths of character strings.

1   132. The system of claim 131 wherein the operating system function is a Microsoft

2 Windows GetTextExtent function.

1   133. A method for protecting content within a page displayed by a computer,

2   comprising:

3   encrypting a designated portion of original content contained within a page to form a

4   portion of encrypted content;

5   replacing the designated portion of original content within the page with the portion

6   of encrypted content; and

7   decrypting the portion of encrypted content when rendering the page into a graphics

8   device.

1   134. The method of claim 133 further comprising decrypting an encrypted string

2   when formatting the page to determine a page layout.

1   135. A system for protecting content within a page displayed by a computer,

2   comprising:

3   an encoder encrypting a designated portion of original content contained within a

4   page to form a portion of encrypted content;

5   an editor replacing the designated portion of original content with the portion of

6   encrypted content, within the page; and

7   a content decoder decrypting the portion of encrypted content when rendering the

8   page into a graphics device.

1   136. The system of claim 135 further comprising a string decoder decrypting an

2   encrypted string when formatting the page to determine a page layout.

1   137. A method for protecting content contained within a page displayed by a

2   computer, comprising:

3   accessing a page containing a portion of encrypted content; and

4   decrypting the portion of encrypted content when rendering the page into a graphics

5   device.

1   138. The method of claim 137 further comprising decrypting an encrypted string

2   when formatting the page to determine a page layout.

1   139. A system for protecting content contained within a page displayed by a

2   computer, comprising:

3   computer hardware storing a page containing a portion of encrypted content; and

4   a content decoder decrypting the portion of encrypted content when rendering the

5   page into a graphics device.

1   140. The system of claim 139 further comprising a string decoder decrypting an

2   encrypted string when formatting the page to determine a page layout.

1   141. A method for protecting text within a page displayed by a computer,

2   comprising:

3   replacing first text strings with second text strings when formatting a page to

4   determine a page layout; and

5   replacing a first portion of text with a second portion of text when rendering the

6   page according to the page layout into a graphics device.

1   142. A system for protecting text within a page displayed by a computer, comprising:

2   a string processor replacing first text strings with second text strings when

3   formatting a page to determine a page layout; and

4   a text processor replacing a first portion of text with a second portion of text when

5   rendering the page according to the page layout into a graphics device.